



The FDA-approved Olympic Cool-Cap System device is a soft, multi-layered cap that contains tubes of circulating water. Using state-of-the-art monitoring technology, the cap lowers the temperature of the brain up to 5 degrees Celsius while maintaining body temperature.

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“Cool-Cap” technology for moderate or severe HIE

We may be one of the youngest children’s hospitals in the nation, but our physicians have an impressive track record for implementing promising medical technology in neonatal medicine.

CHOC Children’s is once again at the forefront of neonatal care with the acquisition of “cool-cap” technology for newborns with moderate or severe hypoxic-ischemic encephalopathy (HIE). CHOC is the first hospital in the region, and second in Southern California, to offer the Olympic Cool-Cap System to prevent or reduce the severity of neurological injury associated with HIE.

The leading-edge technology has been shown to greatly reduce the risk of newborn death and disability.

Treatment must begin within six hours. CHOC has 24-hour neurological coverage, including EEG support, and a 24-hour NICU transport team on standby to ensure treatment begins as quickly as possible.

CHOC PSF pledges \$1 million to campaign

When future CHOC patients and their families enjoy the outdoor play area on the second floor of the new CHOC tower, they will have the CHOC Pediatric Subspecialty Faculty (PSF) to thank. According to PSF Chair and Associate Director of the PICU Paul Lubinsky, M.D., several naming opportunities were considered, but it didn't take long for the physicians to choose the outdoor play area.

"PSF aspires to provide the optimal environment for pediatric subspecialty care," Dr. Lubinsky said. "We elected to take a more positive outlook on being hospitalized and treating the whole child. We wanted our patients and families to have a relaxing place to go to for respite."

He added that giving \$1 million during a period of economic uncertainty is just another way PSF physicians remain dedicated to their mission of caring for children.

"We are all weathering tough times, but we still want to provide the best we can for Orange County's children," Dr. Lubinsky says. "Each PSF physician has personally given from the heart."

Michael Muhonen, M.D., is committed to making Orange County one of the safest and healthiest places for children in the nation.



physicians committed to "Change CHOC, Change the World"

How does a local pediatric facility become a sustainable, world-class children's hospital? This process requires three key elements: a state-of-the-art facility, a significant endowment, and an affiliation with an academic medical center.

In order to accomplish this, CHOC has embarked on the "Change CHOC, Change the World" comprehensive campaign to raise \$125 million by July 1, 2013. And thanks to the support of many Orange County business and community leaders, the campaign is off to a healthy start. CHOC Children's physicians are also rallying around the cause to help make Orange County one of the medically safest and healthiest places for children. Leading this effort is Medical Director of the CHOC Children's Neuroscience Institute and physician campaign chair, Michael Muhonen, M.D.

Dr. Muhonen and his wife, CHOC pediatric cardiologist Linda Muhonen, M.D., have personally committed \$500,000 to support the campaign and encourage others to join them.

"We want to make CHOC an institution that will last forever and always be able to attract the best physicians," said Dr. Michael Muhonen.

As the hub of a regional pediatric health care system, CHOC is responsible for two million children — more than the child population in any one of 39 states. These children and their families are counting on CHOC to do what no one else in Orange County possibly can. Dr. Muhonen's goal is to create awareness about the campaign and achieve 100 percent giving from all CHOC physicians.

"This campaign is about our children's future and ensuring that Orange County has the best hospital facilities available to all children, including the underserved," Dr. Muhonen said. "It is about leaving CHOC a better place than when we first found it."

For more information about the "Change CHOC, Change the World" campaign including naming and endowment opportunities, please contact Jennie Wagner, Campaign Manager, CHOC Children's Foundation, at jwagner@choc.org or (714) 532-8690.

Set to open in Spring 2013, the new tower will enable CHOC to continue to accommodate the pediatric health care needs of the region.



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giving newborns a second chance

The 54-bed CHOC NICU is the only level 3C unit in the region. Last year, physicians sent more than 650 babies to CHOC for life-saving care.

As many as three of every 1,000 infants born in the U.S. will experience interrupted oxygen flow to the brain. Clinical trials have shown that temporarily lowering brain temperature by 2 to 5 degrees Celsius within six hours of birth may reduce the risk of death or disability in infants with moderate or severe hypoxic-ischemic encephalopathy (HIE).

Available in the CHOC NICU, the Olympic Cool-Cap System cools the newborn's brain for 72 hours and then slowly re-warms the patient for an additional four. The first patient was admitted into the unit for this special treatment in March.

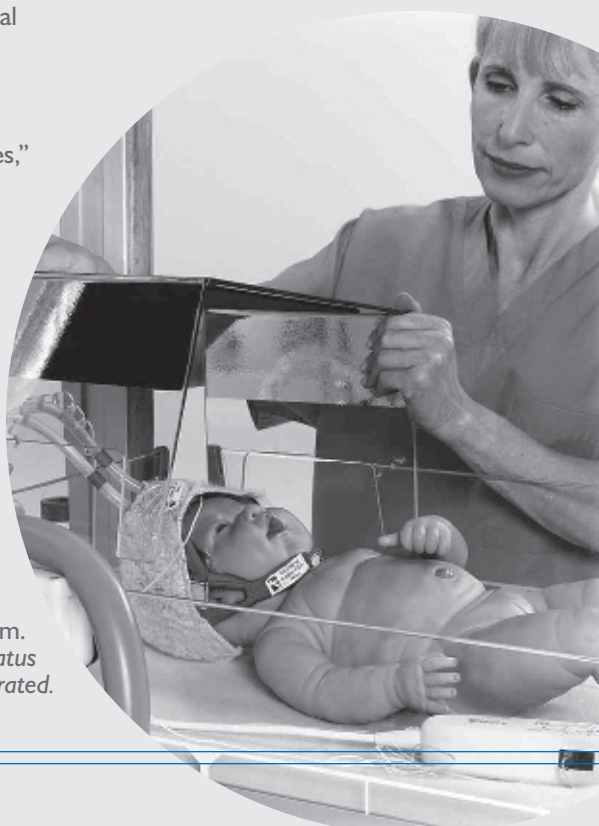
"Cool-cap is one of many ways the CHOC NICU is improving the long-term quality of life for neonates," said Vijay Dhar, M.D., medical director of the CHOC NICU. "This technology can make a tremendous difference in the lives of children throughout the region, and we are proud to be providing this technology."



Dr. Vijay Dhar, medical director of the CHOC NICU.

24-Hour NICU Transport Available

For more information about cool-cap treatment or to arrange a NICU transport, please call (714) 532-8540.



Olympic Cool-Cap System.
Photo courtesy of Natus
Medical Incorporated.

"Cool-Cap" referral criteria

If three criteria are met, cooling is to begin within six (6) hours of birth or sooner:

- A. Infant at \geq 36 weeks GA and at least one of the following:
- Apgar score \leq 5 at 10 minutes after birth
 - Continued need for resuscitation 10 minutes after birth
 - Acidosis defined as either umbilical cord pH or any arterial pH within 60 minutes of birth \leq 7.00
 - Base Deficit \geq 16 mmol/L in umbilical cord blood sample or any blood sample within 60 minutes of birth, that is, arterial or venous blood
- B. Infant with moderate to severe encephalopathy consisting of altered state of consciousness (as shown by lethargy, stupor or coma) and at least one of the following:
- Hypotonia
 - Abnormal reflexes, including oculomotor or papillary abnormalities
 - Absent or weak suck
 - Clinical seizures

If the infant is paralyzed, assume an abnormal evaluation for criterion B and proceed to criterion C.

- C. Infant has an electroencephalogram monitor of at least 20 minutes duration that show either moderately/severely abnormal EEG background activity (score of 2 or 3) or seizures.
- The EEG should be performed after one hour of age and should not be performed within 30 minutes following intravenous (IV) anticonvulsant therapy as this may cause suppression for EEG activity.

EXCLUSION CRITERIA

1. GA <36 weeks gestation
2. Birth weight <1800 grams
3. Evidence of head trauma, skull fracture causing intracranial hemorrhage
4. Major congenital anomalies



in the spotlight:

FEIZAL WAFFARN, M.D., M.B.A.

“All children deserve equal opportunity, and this includes equal access to healthcare. That should be an entitlement for children in this country.”

FEIZAL WAFFARN, M.D., M.B.A.
CHAIR, DEPARTMENT OF PEDIATRICS
UC IRVINE SCHOOL OF MEDICINE

It's been 30 years since Feizal Waffarn, M.D., first stepped onto the University of California, Irvine campus. Fresh from completing a fellowship in perinatal neonatal medicine at the University of Southern California, Dr. Waffarn arrived ready to bring the best possible care to the children and families of Orange County.

From 1980 to 1996, Dr. Waffarn focused on clinical neonatology and research, and helped build the UC Irvine Medical Center NICU into a Level III referral center. He also completed a master's degree in business administration to gain a better understanding of the complexities of health care policy and delivery.

In 2001, Dr. Waffarn became chairman of the department of pediatrics in the UC Irvine School of Medicine, a position encompassing teaching and research for medical students, residents and post-graduate fellows. It also gave him the opportunity to use his skills to influence the health and outcomes of the community.

Children and Families Commission of Orange County

Since 2001, Dr. Waffarn has helped create programs with a community orientation to improve access, assessment and intervention for children from birth to age 5. These specialty programs have provided education and training to families by promoting good parenting skills for the optimal development of young children and school readiness.

Orange County children have benefited from improved management of asthma, dentistry, autism, ADHD, and other developmental and behavioral disorders. Children are now more likely to begin school — healthy and ready to learn.

National Children's Study

This landmark study plans to follow 100,000 children and families over a 20-year period. Thanks to Dr. Waffarn's efforts, Orange County will be well represented. In 2005, UC Irvine was selected as one of six Vanguard Center sites in the nation to initiate the study protocol. In turn, UC Irvine selected CHOC as a major partner in the study, which has given both hospitals, as well as Orange County, national prominence in what is currently considered to be the largest comprehensive study ever undertaken that would influence and improve the long-term outcome of children's health.

The data will become a national repository of biological health outcomes that will provide researchers worldwide with unprecedented insight into health and wellness. This information will undoubtedly benefit generations to come. (See related story on page 7.)

CHOC/UCI Affiliation

It's difficult to imagine Orange County's current health delivery system for children without Dr. Waffarn's many contributions. Perhaps the one that means the most to him is last year's historic affiliation between CHOC and UCI, which he describes as a “dream come true.”

CHOC and UC Irvine are well on the way to creating a world-class pediatric center that integrates high-quality, clinical care; leading-edge research; and excellent training for medical students, residents and post-graduate fellows.

“Orange County deserves a world-class level of healthcare for its children and families,” Dr. Waffarn said. “We may be facing a challenging environment, but we have the talent and the resolve to provide this to the children of Orange County.”

CHOC physicians honored as “agents of change”

The Children and Families Commission of Orange County is commemorating its 10th anniversary by paying tribute to 10 extraordinary Orange County residents whose compassion and dedication have profoundly changed children's lives. One will be profiled each month between February and November 2010 in *OC Family* magazine.

Not surprisingly, the Commission found three of those extraordinary people at CHOC Children's.



February

Joseph H. Donnelly, M.D.
Director, CHOC/UC Irvine
Neurodevelopmental Programs

In 2002, pediatric neurologist Joseph H. Donnelly, M.D., joined one of the Commission's first programs, For OC Kids Developmental Center.

It is still the only center in Orange County dedicated to the earliest diagnosis and treatment of autism, ADHD and other developmental disorders. It focuses on comprehensive care, including family support and advocacy, and education for the public and professionals. Dr. Donnelly also oversees three related programs: CUIDAR, helping parents manage challenging behaviors; Help Me Grow, connecting children and families to developmental services to enhance outcomes; and the Early Developmental Assessment Center (EDAC), providing high-risk infant follow up with team assessments and case management to vulnerable NICU grads and premature infants.

“The Commission has made all the difference in Orange County with the creation of many early childhood developmental services. It has allowed us to help improve the health and school readiness of children and the lives of their families. I am honored to be recognized as the representative of our talented and dedicated team who make up the CHOC/UC Irvine Neurodevelopmental Programs.”



May

Richard Mungo, D.D.S.
Founding Board Member and Medical
Director, Healthy Smiles for Kids of
Orange County

Pediatric dentist Richard Mungo, D.D.S., helped create a safety net of pediatric oral health care for Orange County's neediest children. In 2003, he established the Healthy Smiles for Kids of Orange County dental facility in Garden Grove. Additionally, he developed and implemented a pediatric dental residency program in collaboration with the University of Southern California.

Resident training includes rotations through inpatient medical specialty groups, the CHOC outpatient dental clinic, emergency services and operating room surgeries. The number of pediatric dentists will now grow in Orange County to help meet the overwhelming need.

“We have graduated five residents. Three are still practicing in Orange County at Healthy Smiles and CHOC. Our goal has been not only to teach them how to do surgical and restorative procedures, but to develop within their hearts a desire to offer services to those in need. We hope to instill in them that, ‘To be a pediatric dentist, is to be a child advocate.’ The Commission has helped us make all of this possible, one smile at a time.”



September

Jose Abdenur, M.D.
Medical Director, CHOC Children's
Metabolic Services

Internationally recognized metabolic expert Jose Abdenur, M.D., arrived here in 2003 and built the CHOC Metabolic Program, including the state-of-the-art CHOC Metabolic Lab, completely from scratch. The program currently offers 11 metabolic clinics, including specialty care for lysosomal and neurometabolic disorders and phenylketonuria (PKU). His 16-member team has greatly increased timely access to care, minimizing developmental disability and significant health consequences. Additionally, this program is one of the designated centers for the State of California newborn screening program and part of the Cedars-Sinai/UCLA metabolic and genetics teaching programs. A new fellowship program for medical biochemical genetics and clinical biochemical genetics begins in July.

“I am honored to receive this recognition, which is really for the whole team that works on the Metabolic program. With the support of the Commission, CHOC, the Pediatric Subspecialty Faculty, and the California Department of Public Health, we have been able to meet the needs of children and families in Orange County. They no longer need to go to Los Angeles or San Diego for diagnostic workup and treatment of metabolic diseases.”

“ACE” is the Rx for sudden cardiac death

“Orange County has the highest per-capita of National Collegiate Athletic Association (NCAA) and Olympic athletes in the nation. It certainly behooves us to protect our athletes by providing adequate screening and a safety net for athletes when they do fall.”

ANTHONY C. CHANG, M.D., M.B.A., M.P.H.
MEDICAL DIRECTOR, CHOC CHILDREN'S HEART INSTITUTE
CHAIR, SCIENTIFIC COMMITTEE, LEAPS



EKG screening recommended for sports physicals

The pre-participation sports physical should include:

- Thorough examination in a quiet environment
- Complete history and physical, including family history
- 12-lead EKG screening
- Echocardiogram for athletes with abnormal EKG or family history of syncope or sudden cardiac death

Young Israeli athletes must undergo an annual EKG, echocardiogram and stress test before participating in sports. Italy has implemented such an aggressive cardiac screening strategy that high school athletes have a lower incidence of sudden cardiac death than non-athletic peers. Closer to home, a program that placed automated external defibrillators (AED) at Milwaukee high schools has saved the lives of students— and even more adults.

Those were some of the international findings presented by Anthony C. Chang, M.D., medical director of the CHOC Children's Heart Institute, at the second annual Life-Threatening Events Associated With Pediatric Patients in Sports (LEAPS) conference held at the Orange County Department of Education in February.

The conference, organized by Dr. Chang and Anjan Batra, M.D., medical director of electrophysiology of the CHOC Children's Heart Institute, among other physicians and organizations, was attended by more than 200 Orange County school board members, high school coaches, school nurses, community pediatricians and parents who have been galvanized into action by the incidence of sudden cardiac death in local teenage athletes.

“Hypertrophic cardiomyopathy, the most common cause of sudden cardiac death in young athletes, occurs in 1 out of every 500 people,” Dr. Chang said. “Sudden cardiac death is a public health issue that requires a community-wide response to protect athletes.”

Based on a review of evidence and findings discussed with international experts, Dr. Chang recommends a three-point strategy to minimize risk:

- A — Automatic external defibrillator (AED)
- C — CPR training
- E — EKG screening

He added that implementing “ACE” will undoubtedly yield additional benefits. The siblings and parents of athletes diagnosed with cardiac disease may also be screened and treated as needed.

“This comprehensive effort is similar in concept to the space program,” Dr. Chang said. “That wasn't just about going to the moon, but about all the dividends that came from a program of that size and scope.”

For more information about LEAPS, contact The CHOC Heart Institute at (714) 532-7576.

national children's study underway in Orange County

University of California, Irvine, in partnership with CHOC Children's, the Children and Families Commission of Orange County and the Orange County Health Care Agency, was selected to conduct the study in 2005 after Orange County was named one of six initial national Vanguard Centers. For the first five years of the 25-year-study, UC Irvine researchers and their partners received a \$14.6 million grant from the National Institutes of Health to help refine and field test the initial protocols.

Local data collection has begun for the country's largest and most comprehensive long-term study of environment on child health and development. Since last October, more than 20 babies have been born into Orange County families recruited to participate in the National Children's Study, which will follow more than 100,000 U.S. children from birth to age 21.

CHOC is participating in field birth visits at 12 Orange County partner hospitals. CHOC physician representatives include Vijay Dhar, M.D., medical director of the CHOC NICU; Leonard Sender, M.D., medical director of CHOC Children's Cancer Institute; and Maria Minon, M.D., chief medical officer.

CHOC researchers expect to attend 250 births a year for the next five years, said Brent Dethlefs, director of the CHOC Research Institute. Biological samples will be collected from the child, parents, family home and neighborhood for the duration of the study. Researchers will also assess such environmental factors as childcare,

neighborhood safety and healthcare to examine the effect on:

- Birth defects and pregnancy-related problems
- Behavior, learning and mental health disorders
- Injuries
- Obesity
- Asthma
- Diabetes

However, healthcare professionals will not have to wait 21 years before seeing the results. Findings will be made public as soon as they can be verified.

"The depth and breadth of information we gather should result in significant understanding of the environmental and genetic factors that combine to play a role in childhood disease," Dethlefs said. "We will be able to look at the commonalities and differences, including geographic differences, in various diseases we see in kids." (See related story on page 4.)

health reform bill makes positive steps for children; falls short in some areas

On March 23, 2010, President Obama signed the "Patient Protection and Affordable Care Act of 2010" (PPACA). A week later, he signed the "Health Care and Education Reconciliation Act of 2010" (HCERA), which made changes to the PPACA. The combination of these two bills encompasses the culmination of a health reform effort that began more than 14 months ago.

CHOC Children's is optimistic about a number of child health provisions that were included in the final bill. For example, it immediately establishes a prohibition on pre-existing condition exclusions for children and requires insurance plans to provide dependent coverage until a child turns 26. The legislation also authorizes and funds the Children's Health Insurance Program (CHIP) through Sept. 30, 2015, and requires states to maintain current Medicaid and CHIP coverage for children through Sept. 30, 2019.

Children's hospitals actively advocated for, and were successful in securing, language that requires states to pay for primary

care physician (including pediatrician) services at Medicare levels in 2013 and 2014. In addition, we lobbied enthusiastically for a provision that establishes a Pediatric Accountable Care Organization (ACO) Demonstration Project within Medicaid. Also important to children's hospitals, pediatricians and subspecialists is a new pediatric specialty loan repayment program for pediatric subspecialists and specialists.

In several areas, however, the bill fails to address the challenges faced by pediatric providers. While it makes important progress toward improved reimbursement for pediatricians, it does nothing to address inadequate Medicaid reimbursement for pediatric subspecialists and children's hospitals. In fact, the bill calls for \$18.1 billion in cuts to Medicaid Disproportionate Share Hospital (DSH) funding in 2014-2020. CHOC will continue to work with the National Association of Children's Hospitals to urge Congressional action in these critical areas.



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CHOC receives Leapfrog award

CHOC Children's is one of 45 hospitals — and one of only eight children's hospitals across the nation — named to the "Leapfrog 2009 Top Hospitals" list, based on the Leapfrog Hospital Survey. CHOC received 97.2 points out of a possible 100, compared to an average score of 72.4 points

for the other children's hospitals. The survey is the only national public comparison of key issues, including mortality rates for certain common procedures, infection rates, safety practices and measures of efficiency.



we want to
hear from
you about
*Physician
Connection!*

Please complete our quick and easy survey, available online at www.choc.org/physicianconnection. Your opinion matters to us!